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Subject Response to EPA Comments to OSS Work Plan Addendum  
No. 2

History:

 This message has been forwarded.

Chris - the response to comments to OSS Work Plan Addendum No. 2 is  
attached. The Draft EECA Report will be e-mailed shortly.

Have a nice weekend.

Regards, Sharon



Comment\_response\_fnl.pdf



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## Memorandum

**To:** Chris Lichens - USEPA

**From:** Dave Chamberlin - CDM  
Sharon Wallin - CDM

**Date:** April 29, 2005

**Subject:** Response to EPA Comments on On-Site Soils RI/FS Work Plan  
Addendum No. 2  
Scope of Work for Additional Investigation  
Omega Chemical Superfund Site  
10500-37240-T2.OSS.XTRA  
10500-5.2.3

This document presents our responses to EPA comments on the document referenced above, that were received on April 18, 2005. The original EPA comment text is presented in *italics*, followed by our proposed responses. These responses are being provided for review, and after resolution of any concerns on the proposed modifications to the work plan, a revised document will be issued incorporating these responses.

### General Comments

*1. Figure 6 and all subsequent figures do not show the north arrow. All maps should show north to facilitate review.*

The maps are plotted in state plane, NAD 83, California Zone 5 Coordinates, with north toward the top of the page. A north arrow will be plotted on all figures in the revised document.

*2. The building names (e.g., Star City, etc.) and street names shown in Plate 1 should be shown on maps (i.e., in figures).*

Additional annotation of street names and building designations will be included on maps in the revised document.



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*3. Off-property sampling locations should be addressed in this document to avoid later addenda. See comments 4, 11, 13, 14, and Attachment 1.*

The issues of off-site sampling locations are addressed under the individual comments noted above and are consistent with our discussions on April 20, 2005.

#### **Specific Comments**

*4. Section 2.0, Objectives. As indicated in the Consent Decree (see Attachment 1), objectives should include characterization of the extent of contamination resulting from the Omega Site.*

OPOG understands and does not take issue with the requirements of the Consent Decree as stated, however, we do not believe that characterizing the extent of contamination associated with the Omega site is appropriately included as an objective of this phase of data collection. As we discussed in our April 20 meeting with EPA, OPOG intends to fully comply with the CD requirements; however, delineation of the extent of contamination prior to source characterization is premature. This phase of data collection is being undertaken primarily for the purpose of attempting to identify and characterize the source of contamination on the Omega Site.

*5. Figures 3 and 4. The sand unit at the 120-foot elevation extends beneath GP-7 (between 700 and 600 feet on the horizontal scale in Figure 4) but terminates close to OW-8 on Figure 3. Similarly, the sandy unit at the 80-foot elevation beneath GP-7 dips toward OW-8 on Figure 3 but away from OW-8 in Figure 4. While EPA recognizes that there is considerable uncertainty about the extent and dip of the units, the figures should show consistent interpretation of the lithology.*

These sections are consistent. Figure 3 shows the eastern limit of plotting as a consistent location on both sections for the deep sand. Note that the sand symbol is extended to GP-7 on Figure 3 and GP-5 on Figure 4. Note that the truncation is due to lack of data at this depth to the east and the contacts are qualified with a "?" symbol.

*6. Section 3.1, Geologic Framework, second paragraph. The thin sandy unit referred to as a stringer is not shown on the boring log for GP-2 or on cross-section A-A'. According to the text, this unit should correspond to the SP unit found at a depth of 56 feet at GP-1. It seems that this unit is not present at GP-2 or was not noticed during logging. The text should be revised to reconcile this.*

The text as presented is correct. The cross-sections show the dominant lithology. The noted stringer occurs as sand or sand and gravel within a predominant silt or clay matrix. The cross-sections by necessity simplify the lithology to the dominant lithology logged. The intervals referenced are as follows:

GP-1 77 - 78.5 feet bgs - ML Silt with gravel, 60% silt, 25% gravel, 15% sand

GP-2 78.5 - 79.5 feet bgs - CL clay with sand, 70% clay, 20% sand, 10% silt

GP-3A 78 - 79 feet bgs - CL clay with sand 60% clay, 30% sand, 10% silt



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GP-6 75 - 77 feet bgs - CL description notes trace of gravel to ¼" diameter

The text will be modified to include this more detailed information, and copies of the referenced boring logs will be included as an attachment.

*7. Section 3.2, Contaminant Distributions. The speculative statement about other sources of Freons in the second paragraph should be supported by evidence or deleted.*

This statement is fully supported and is not "speculative". Freon manufacturing occurred on the adjacent parcel for a number of years and existing vapor data demonstrate a higher percentage of freons on this adjacent parcel. Consequently, it is reasonable to conclude based upon the data and information that off-site sources may exist. As noted in the response to Comment 13 below, vapor probes SV-1, SV-2 and SV-3 will address this issue.

*8. Section 3.2, Contaminant Distributions. Consistent with the interpretation of soil gas concentrations, Freon 11 concentrations in the soil should also be shown.*

Freon 11 was not previously analyzed in soils and this will be noted in the text. As noted in the work plan, all proposed sampling will include Freon 11 and Freon 113.

*9. Section 3.2, Contaminant Distributions. Discussion of Figure 18 is missing.*

The distribution below 60 feet is similar to that on Figure 17 and the statement will be expanded in the revised text to include the reference to Figure 18.

*10. Section 3.2, Contaminant Distributions. Page 6, first paragraph. Revise the statement about the barrier effect of the capillary fringe to state that it affects non-aqueous phase liquids (NAPL) in this manner, rather than compounds dissolved in infiltrating water. Note that contamination was likely released and exists at the site as both NAPL and dissolved in water.*

This process also has the potential to affect dissolved constituents, if a localized source of recharge is present, since the relative permeability of the capillary fringe to water decreases due to the change in moisture content. If recharge is uniform, then lateral spreading is unlikely, however, under a localized source of recharge such as a sump, this may be significant. This effect would be most pronounced for a NAPL. Concentrations on-site, where PCE (solubility ~200 - 250 mg/liter) ranges in concentration up to 70 percent of solubility suggests that NAPL has impacted the groundwater, thus spreading is expected from this mechanism. During time periods when the water level was higher, dissolved constituents would also move laterally with flowing groundwater and partition onto the aquifer matrix materials. The text will be revised as follows:

"Contamination being carried downward through the vadose zone from a localized source of recharge may potentially spread laterally on encountering the capillary fringe due to decreases in the relative permeability to water. This effect is more pronounced for a NAPL, where the capillary barrier driven spreading is pronounced, even for diffuse sources. The



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release of NAPL at the site is suspected based on observed concentrations at OW-1 of up to about 70 percent of solubility for PCE."

*11. Section 4.0, Proposed Scope of Work and Procedures. Page 7, 3<sup>rd</sup> paragraph. One of the objectives of this investigation is to characterize the extent of contamination. The investigation must determine 1) the extent of contamination, which would be expected to decrease in concentration away from the former Omega property, and/or 2) an indication of other sources, such as by concentrations increasing away from the former Omega property or different composition of contamination away from the former Omega property. The possibility that off-property sources are contributing to contamination from the Omega property must also be accounted for. As noted previously, the objectives of this specific investigation do not include characterizing the extent of contamination. Such characterization may be necessary as a subsequent step. The program focuses first on identifying the source areas to determine where additional sampling may be required to evaluate the extent of contamination in soil vapor associated with the Omega Site.*

*12. Section 4.0, Proposed Scope of Work and Procedures. Page 8, 3<sup>rd</sup> paragraph. Discuss the rationale for selection of MIP-7 to MIP-12.*

The data obtained from these MIP locations on the property west of the site will be used to define the presence, geometry and degree of contamination in postulated sand channel deposits along this trend. These data are expected to be valuable in identifying potential source areas via "backtracking" from Putnam Street to the Omega property. Defining the pathway for transport from the site to Putnam is also important to the upcoming EE/CA.

*13. Section 4.0, Proposed Scope of Work and Procedures. As stated in Section 3.2 of the work plan addendum, "The majority of the available samples do not extend to a sufficient depth to assess the role of volatilization from the water table in controlling soil vapor concentrations."*

*Additional soil gas and MIP sampling locations are required as shown in Attachment 2. Two of these locations correspond to SG-13 and SG-14 where contaminant vapors were detected at 6 and 12 feet below ground surface. The soil gas sampling depths at these locations should be 18-70 feet. Hydropunch (HP) samples may also be required at these locations, depending on the MIP results.*

*Three soil gas, two MIP, and possibly HP samples are required along the property boundary with Medlin and Sons where high PCE and Freon 11 concentrations were detected in historical shallow soil gas samples. Three additional MIP, and possibly HP, samples are required between the Terra Pave and Bishop Co. buildings, north of MIP-11, and MIP-1 respectively.*

*In addition to planned VOC analyses, soil samples should also be analyzed for density, porosity, moisture content, organic carbon, etc. These geotechnical results will be used in support of the Feasibility Study.*

The proposed additional soil gas sampling locations north of the Omega property boundary are close to the proposed locations SV-1, SV-2 and SV-3. As discussed on April 20, these will be extended to a depth of 70 feet, rather than the previously proposed 40 feet. Proposed location SV-12, at the southwestern boundary of the Omega property will also be extended to



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a depth of 70 feet, from the currently proposed 40 feet. Based on results from the initial 12 soil gas sampling locations, additional contingent sampling locations may be selected to meet the program objectives, which may potentially include sampling in areas off of the Omega property but within the Phase 1A area. Figure 23 will be modified to reflect this change.

EPA requested the addition of 6 MIP locations in the comments. As discussed on April 20, contingent MIP sampling locations are anticipated, but will be selected after initial data from the soil gas investigation and initial MIP locations are provided by the laboratory and evaluated. These additional data will allow informed selection of locations to meet program objectives. No modification to the prescribed MIP sampling locations is, therefore, proposed.

The requested physical soil analyses will be added to the analytical suite. We propose that not all soil samples be subject to physical analysis and that we collect only enough samples necessary to characterize the major lithologies. We anticipate that we will collect a total of 30 soil samples. Moisture content and total organic carbon determinations will be conducted on all 30 of these soil samples, while up to ten of the samples will be analyzed for density and porosity. It is anticipated that the soil samples analyzed for density and porosity characteristics will be selected from locations exhibiting either (a) source area contaminant levels, or (b) more permeable transporting pathways from such source area(s).

*Additional off-property locations may also be required depending on the results of currently planned samples. The work plan should include a rationale for the placement of additional off-property sampling locations and criteria for further sampling (see Comment 14).*

Additional sampling may be conducted within the Phase 1A area and off the Omega property as part of the contingent sampling effort, dependant upon results obtained from the prescribed sampling locations. Development of criteria without the benefit of potentially determinative results from this sampling program is premature and inefficient and is discussed further in responses to Comment 14.

*Comment 3 of CH2M Hill's February 10, 2005 review memorandum stated that indoor air samples should be collected from two buildings (one south and one north of Putnam Street). Alternatively, additional shallow soil gas samples may be collected near (around) the buildings to assess the threat to indoor air quality. Depending on the shallow soil gas sample results, indoor air sampling may be required.*

Additional shallow soil gas sampling around buildings will be considered based on findings from the initial prescribed soil gas sampling locations.

*14. Section 5.0, Data Quality Objectives. Page 10, first paragraph. The extent of contamination must be defined prior to the decisions regarding remediation. The 2003 Final Work Plan (Sections 1 and 7) state that one of the objectives of the RI/FS is to estimate the extent and nature of the contaminants. Specific decision statements and decision rules should be included for identifying additional sampling locations, including indoor air samples, based on the initial data.*



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*Each of the seven steps in the DQO process should be explicitly addressed in the work plan addendum, incorporated by reference to other documents, or both. It appears that only the first three steps have been addressed in the work plan addendum.*

Table 7-1 from the OSS work plan has been revised to reflect the objectives of the proposed investigation, and is attached. Specific criteria for selecting additional sampling locations identified as contingent sampling locations will be difficult to develop without benefit of these sampling results. The program is sequenced as shown on Figure 22, with collection of soil gas samples first. The results of the soil gas sampling may be used to refine locations of the prescribed MIP locations and to select contingent soil gas locations necessary to meet program objectives. Contingent MIP locations and hydropunch locations may be selected after all soil gas results are available and the prescribed MIP borings are completed. Field and lab results will be made available to EPA and a meeting to develop a consensus on locations for the contingent sampling locations will be held.

cc: Tom Perina, CH2MHill  
Chuck McLaughlin, *de maximis, inc.*



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**Table 7-1**  
**Summary of Data Quality Objectives for Addendum No. 2 to On-Site Soils RI/FS Work Plan**

STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7
Statement of Problem	Decisions	Inputs to the Decisions	Boundaries of the Study	Decision Rules	Limits on Decision Errors	Optimize the Sampling Design
Former solvent recycling activities have resulted in release of chemicals to groundwater and soils of the Site. These chemicals could potentially have an adverse effect upon human health and the environment. A soils RI/FS and risk assessment are being prepared to evaluate the nature and extent of contamination in soils and the potential threat to human health and to identify remedial alternatives. Determination of pathways for releases from contaminated soils to groundwater, and the potential for releases from contaminated groundwater to soil vapor are also being investigated	<p>What is the nature and extent of contamination in soils and soil gas?</p> <p>What are site-related contaminant concentrations in indoor and ambient air?</p> <p>Do contaminant concentrations in soils, soil gas, or air pose an unacceptable risk to human health or the environment?</p> <p>Are additional source areas present at the Site?</p> <p>What remedial alternatives are appropriate for the contaminants and media of concern?</p> <p>Is volatilization from groundwater a source of elevated concentrations in soil vapor</p>	<p>Historical subsurface soil, soil gas, and soil characteristics data</p> <p>Analytical data resulting from this project:</p> <ol style="list-style-type: none"> <li>1) Nature and extent of surface soil contamination;</li> <li>2) Soil gas and surface soil data that characterize potential source areas identified in historical aerial photographs;</li> <li>3) soil gas data for site boundaries;</li> <li>4) indoor and ambient air data; and</li> <li>5) Chemical and physical soil properties that influence risk and feasibility of remedial alternatives.</li> </ol>	<p>Surface and subsurface soils and soil gas within Site boundaries.</p> <p>Soil gas at the off-site former Cal-Air facility.</p> <p>Off-site ambient air.</p> <p>Off-site indoor air.</p>	<p>If chemical concentrations in soil, indoor air, ambient air, and soil gas do not pose a risk to human health, then recommend no further action.</p> <p>If extent of soil vapor contamination originating from the site has not been defined, then the geographic area of soil vapor sampling will be extended.</p> <p>If chemicals in soil, indoor air, ambient air, or soil gas at the Site pose a risk to human health, the following will take place:</p> <p>Chemical-specific action levels will be developed based on site-specific data;</p> <p>An approach for Site remediation will be selected;</p> <p>The FS will identify remedial alternatives based on historical data and data collected during the investigation.</p>	<p>Sample design for evaluating potential source areas is purposive (i.e., judgment) sampling. Decision errors will not be set for judgmental samples. Likewise, decision errors will not be set for physical characteristics data.</p> <p>Regarding nonjudgmental surface soil, indoor air, ambient air, and soil gas samples, data quality is defined in Section 7.1.4.3 of the final work plan.</p>	<p>The Addendum No. 2 Work Plan was optimized to focus on collection of data based on the site conceptual model, data uses, availability of historical data, and data gaps identified in this addendum. The sampling program includes a provision for contingent sampling locations for soil gas, and MIP sampling locations. These contingent sampling locations will be selected after evaluation of the prescribed soil gas and MIP results. Hydropunch sampling may also be conducted to assess locations of contaminants entering groundwater.</p>